



Using Twitter for Situational Awareness

By Tim Brice
National Weather Service
WFO El Paso
January 6, 2011



What is Social Media



Put simply it is media for social interaction

Or perhaps better defined as:

Social media refers to online services that allow people to publicly create, share, and discuss information

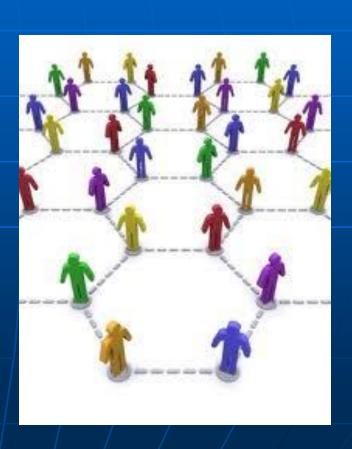


What is Social Media



Social media services include, but are not limited to:

- Blogs
- Social networks
- Location-based social networks
- Wikis
- Video, music and photo sharing
- Microblogging services
- Business Reviews
- Social bookmarking services





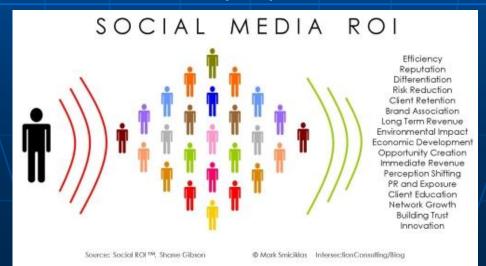


Why is Social Media Important



Social media is becoming many people's primary source of news, opinion, and entertainment

- Social media is now ubiquitous -- widespread blogging, social networks, video sharing sites, and opportunities to comment on and rate online content
- Power of personal connections -- Research shows people are more compelled to act on information that's transmitted through personal ties
- Relevancy for government We can use social media to share timely government information with the people who need it





How many people???



- Foursquare 5+ million users
- Yelp 38+ million users
- Myspace 66 million users
- LinkedIn 85 million users
- Twitter 190+ million users



Facebook – 500+ million users



Why should the NWS monitor social media¹



- Maintain situational awareness (more coming on this)
- Message awareness and control
- Rumor control
- Helps to put a "friendly" face on our agency

1 Blog entry from http://idisaster.wordpress.com/









What is Twitter?



According to Twitter, Twitter is:

"without a doubt the best way to share and discover what is happening right now."



Perhaps a less biased description of Twitter would:

"Twitter is a free <u>social networking</u> and <u>microblogging</u> service that enables its users to send and read messages known as *tweets*." - Wikipedia



The advantages of Twitter



- Large user database
 - 190+ million users around the world.
 - 30+ million users in the U.S.
- Rich flexible Application Programming Interface (API)
- Easy to post tweets from various platforms
- Easy to retrieve and process tweets



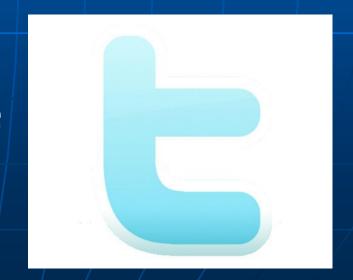
What is a Tweet?



It is a 140 character (or less) message that a user (tweeter) sends out that is posted on their Twitter home page and also sent to the tweeter's subscribers called followers?

Tweets can include:

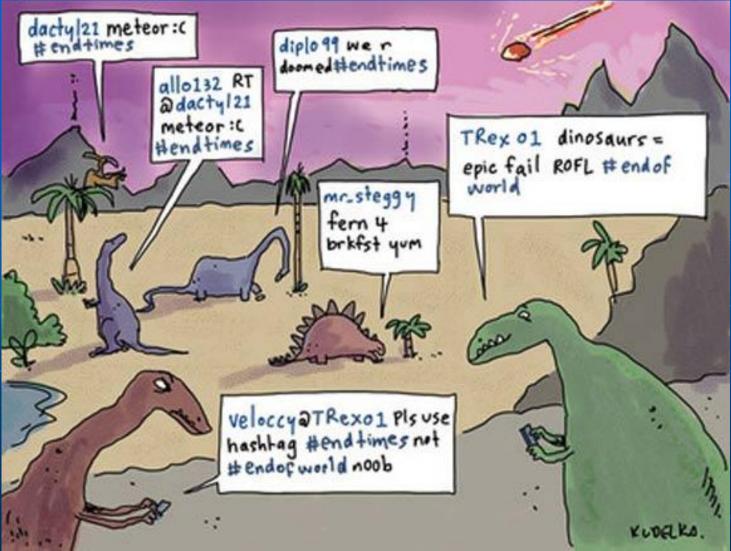
- A simple text message
- Links to a picture
- Links to a web page





If the dinosaurs had Twitter









Using Twitter searches for situational awareness



Advance Twitter Search



Advanced Twitter Search - Mozilla Firefox						
le <u>E</u> dit <u>Vi</u> ew History Bookmarks <u>T</u> ools <u>H</u> elp	Description of the second		· 6 · · ·	0 000000		
http://search.twitter.com/advan	ced	MILLO	000			₽ (BB
Most Visited Most Suite Im BBC News - Snow 0000 BBC News - Snow	National W	/eather S NOAA's Nation	al http://myTwitter/	M Gmail - Inbox - tim	of foursquare :: Tim of Google News	Advanced T
The belief of th			a nepymymessy 1 decessor		Consider of the constant of th	S narancea mag
		itter [Search Advanced Search		
	Advan	ced Search				
	Use this fo box.)	rm to automatically constr	uct your query. (Alternatively, you can type <u>se</u>	earch operators directly into the search		
	Find twe	ets based on		Search		
	Words	All of these words	snow ice			
		This exact phrase				
		Any of these words	blizzard wind visibility			
		None of these words	cafe football			
		This hashtag				
		Written in	Any Language (persistent)			
	People	From this person				
		To this person				
		Referencing this person				
	Places	Near this place	Albuequerque, New Mexi			
	Flaces	Within this distance	15 • miles O kilometers			
		Within this distance	13 V O Miles O Kilometers			
	Dates	Since this date				
		Until this date				
	Attitudes	With positive attitude :)				
		With negative attitude :(
		Asking a question ?				
			_			
	Other	Containing links				
		Include retweets				
		Results per page	50 v (persistent)			
			Search			
		Twitte	r Home · About Twitter Search · API · Jobs · .	Install Search Plugin		e e
		700	© 2011 Twitter Inc			- 0



Advance Twitter Search



Advantages:

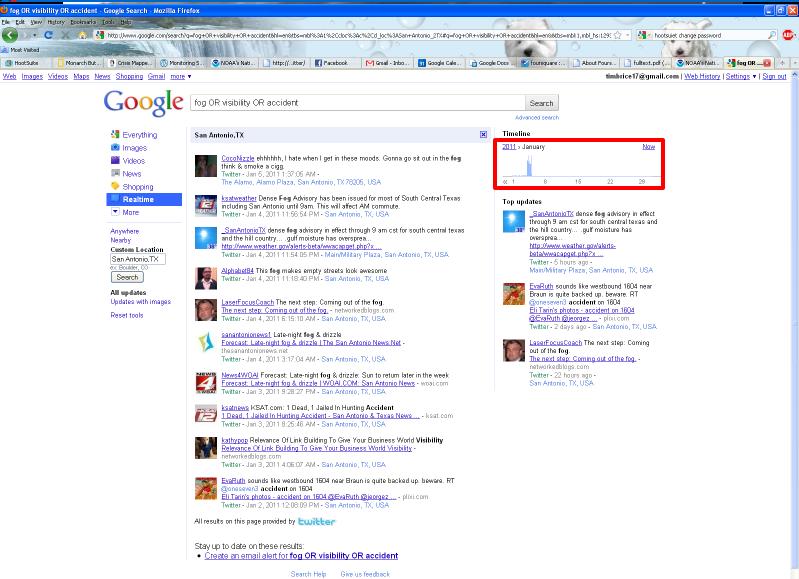
- No Twitter account needed
- It does do geo-location (not automatically though)
- Good control over what you are searching for

- Only one search at a time
- Does not auto update automatically



Google Realtime







Google Realtime



Advantages:

- No Twitter account needed
- Can provide a nice graphic of the number of tweets
- It does do geo-location (not automatically though)
- Good control over what you are searching for

- Only one search at a time
- Does not auto update automatically



AWIPS Twitter Monitor



File Edit Options Version Tools Scripts Products	Help
AFOS Browser Load History WMO Search Enter Editor Accum Update Obs Clear	
AFOS Cmd: WMO TTAAii CCCC: AWIPS ID:	
TWITTER ALERT - Mon Jan 3 19:45:03 2011	
Something of interest may be happening out there.	
http://webspokane.geg.noaa.gov/otx.rss	- 111
	- 111
######################################	- 111
appeals citations by OR OSHA and dam work shuts down barge traffic in	- 111
the Valley. Mon, 03 Jan 2011 19:46:30 -1 Minutes Ago	- 111
http://twitter.com/KLEWActionNews/statuses/22015966745468928	- 111
******	- 111
wsdot_passes: Snoqualmie: Clear skies with areas of blowing snow - Bare with snow & ice in places http://bit.ly/17B8nc	- 111
Mon, 03 Jan 2011 19:30:05 15 Minutes Ago	- 111
http://twitter.com/wsdot_passes/statuses/22011834823352320	
++++++++	- 111
wsdot_passes: Stevens: Scattered clouds - Bare with snow & ice in places http://bit.ly/2jnkDV	- 111
Mon, 03 Jan 2011 19:30:04 15 Minutes Ago	- 111
http://twitter.com/wsdot_passes/statuses/22011831799259137	
	区



AWIPS Twitter Monitor



Advantages:

- Easy to set-up and install
- Limited number of returned tweets
- Available on AWIPS display
- You can customize what you search for
- Can search for words or users

- Twitter account required
- Too many tweets can get annoying
- Limited number of returned tweets may miss some tweets



LAN Twitter Monitor



National Weather Service Albuquerque

4	Tab aqa orque	cast Office]
<u>ABQ</u>	Office Home NWS Albuquerque Pub	olic Homepage SRH Homepage Logo
Public Phone Numbers	Quick Links	NWSFO Items
ABQ Public Line	-ABQ Spot Monitoring Page	-Temp/Precip Obs Map
ABQ Fax	-Collab Conv Forecast Prod(CCFP)	-Situational Awareness Map
ABQ Media	- <u>E-Learning</u>	- <u>Outreach Database</u>
Spotter Hotline	-SDM Outage Reporting	-AWOC Training
MAS Bubble Lieu	-SRH Web Outage Reporting	-DLOC Training
MAF Public Line	-General SR Outage Procedures	-Bldg Maintenance
ELP Public Line	-EMRS Login(IE only)	-Weekly Crop Weather Report
CWSU ZAB	-USOS Login(IE only)	-City Net Map
	-NOAA Accident Report	- <u>Photo Album</u>
	-SR Sharepoint •	-ABQ Distance Calculator
	-WFO CCTV Applet	- <u>Daily Summary</u>
	- <u>Safety Videos</u>	- <u>Bulletin Board</u>
		-Electronic Shift Log
	-NWSChat SDM 692×738	
NOAA Communications	Local Graphicast Page	- CMS Instructions
	Graphicast Archive	- CMS Page
Airport Security		
Airport Security Non Emergency:	Twitter Reports Cedar Crest exit. VEKY ICY. #nmv 18:59:15 +0000 2010)	
Non Emergency:	Twitter Reports Cedar Crest exit, VERY ICY, #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv	vx #INMStorm (Inu Dec 30 /
Non Emergency: Emergency:	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before 0	vx #INMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy.
Non Emergency:	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +0	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010)
Non Emergency: Emergency: Police, Fire, Rescue and	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv 1-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv	ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv 1-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010)	ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 2000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv 1-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before #nmwx (Thu Dec 30 18:58:58 +0 IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010)
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving coaround Silver City. #nmwx "zero	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) conditions reported on hwy's " visibility. nmroads.com
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving or	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) conditions reported on hwy's " visibility. nmroads.com
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr Employee Accountability	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving coaround Silver City. #nmwx "zero #nmwx http://yfrog.com/h2gcip 2010) fyj77: RT @krqe: There are curre	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) conditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ntly 11 closings and delays.
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving coaround Silver City. #nmwx "zero #nmwx http://yfrog.com/h2gcip (2010) fyj77: RT @krqe: There are curre Check out the list on our site: ht	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) conditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ntly 11 closings and delays.
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr Employee Accountability	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before (#nmwx (Thu Dec 30 18:58:58 +(IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving coaround Silver City. #nmwx "zero #nmwx http://yfrog.com/h2gcip (2010) fyj77: RT @krqe: There are curre Check out the list on our site: ht Dec 30 18:52:12 +0000 2010)	ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 2000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) onditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ently 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX (Thu
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr Employee Accountability During Emergency Situations Civil Emergency & Child	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before of #nmwx (Thu Dec 30 18:58:58 +0 IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving of around Silver City, #nmwx "zero #nmwx http://yfrog.com/h2gcip id 2010) fyj77: RT @krqe: There are curre Check out the list on our site: ht Dec 30 18:52:12 +0000 2010) LosRanchosEM: RT @krqe: currel	ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) onditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ntly 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX (Thu
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr Employee Accountability During Emergency Situations	Twitter Reports Cedar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before 0 #nmwx (Thu Dec 30 18:58:58 +0 IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving of around Silver City. #nmwx "zero #nmwx http://yfrog.com/h2gcip 2010) fyj77: RT @krqe: There are curre Check out the list on our site: ht Dec 30 18:52:12 +0000 2010) LosRanchosEM: RT @krqe: currer Check out the list on our site: ht	vx #NMStorm (Inu Dec 30 ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) onditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ntly 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX (Thu ntly 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX
Non Emergency: Emergency: Police, Fire, Rescue and Hospital Numbers Bomb Threat Report Homeland Security Federal Protective Svc NOAA Command Ctr Employee Accountability During Emergency Situations Civil Emergency & Child	Twitter Reports Cegar Crest exit. VERY ICY. #nmv 18:59:15 +0000 2010) melodyromancito: CUIDADO! Driv I-40 EB at standstill just before of #nmwx (Thu Dec 30 18:58:58 +0 IanMSchwartz: RT @peakwx: I-4 Cedar Crest exit. VERY icy. #nmv 2010) peakwx: I-40 EB at standstill jus icy. #nmwx (Thu Dec 30 18:58:0 IanMSchwartz: horrible driving of around Silver City, #nmwx "zero #nmwx http://yfrog.com/h2gcip id 2010) fyj77: RT @krqe: There are curre Check out the list on our site: ht Dec 30 18:52:12 +0000 2010) LosRanchosEM: RT @krqe: currel	ve with Caution! RT @peakwx: Cedar Crest exit. VERY icy. 0000 2010) 0 EB at standstill just before vx (Thu Dec 30 18:58:21 +0000 t before Cedar Crest exit. VERY 2 +0000 2010) onditions reported on hwy's " visibility. nmroads.com (Thu Dec 30 18:55:21 +0000 ntly 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX (Thu ntly 11 closings and delays. tp://bit.ly/eXTrK5 #NMWX

http://bit.ly/dF3mWR





LAN Twitter Monitor



Advantages:

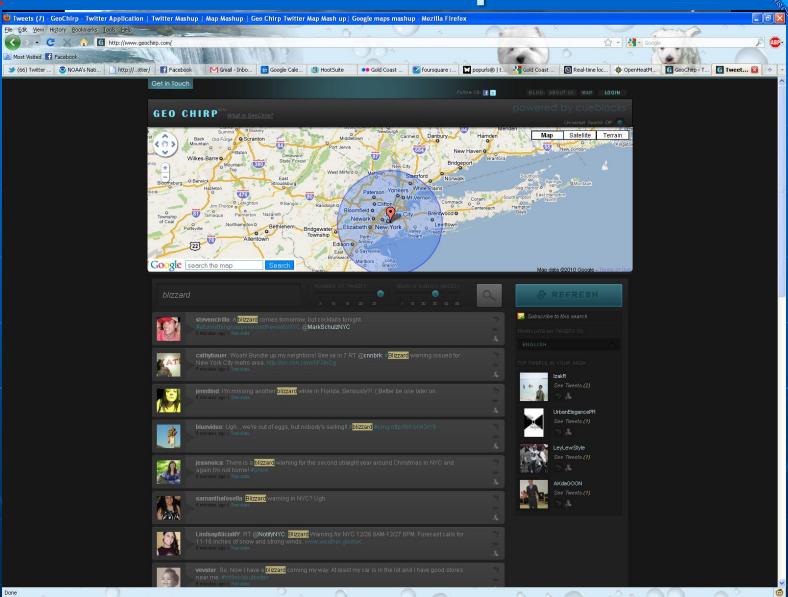
- Easy to install
- Shows up on the office's intranet page
- You can customize what you search for
- Can search for words or users

- Requires a valid Twitter account
- Does not do geo-location of tweets
- Too many tweets can scroll off the page
- Not archived



GeoChirp







GeoChirp



Advantages:

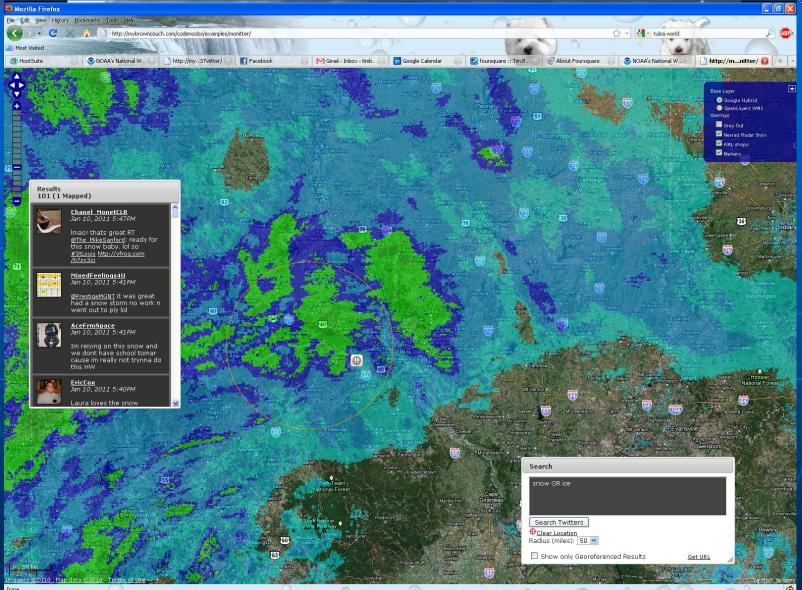
- It does geo-location of tweets very nicely
- Can control what you are searching for
- Does not require twitter account

- Only one search at a time
- Does not update automatically



Geo Tweet Monitor





http://mybrowncouch.com/codenoobs/examples/monitter



Geo Tweet Monitor



Advantages:

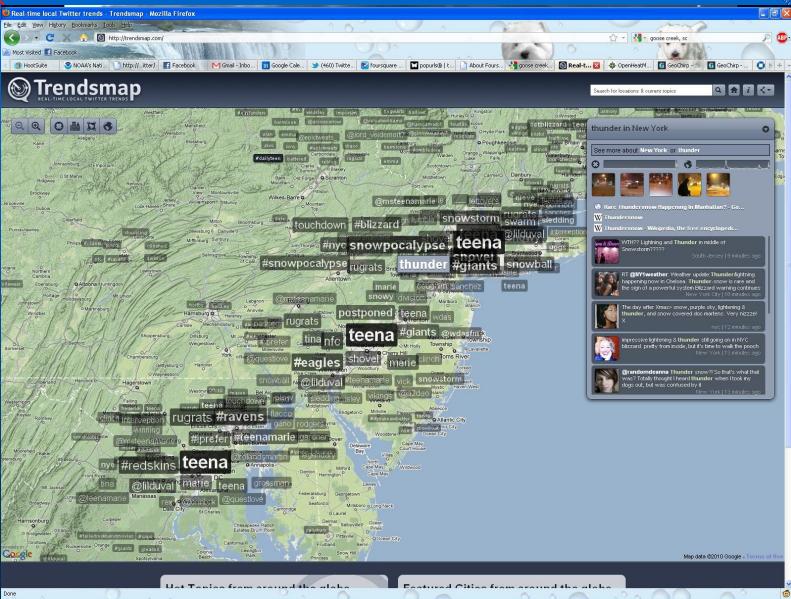
- No Twitter account required
- One click geo-location built in
- Automatic updates
- Overlay the radar

- A work in progress
- Can be flaky at times
- May miss non geo-tagged Tweets



Twitter Trends







Twitter Trends



Advantages:

- Build in geo-located searches
- Automatic update
- Provides timeline graphs of trending tweets
- No Twitter account needed

- Only trends for large tweet populations (ie..big cities)
- Not sure of the update cycle (not very fast responding)
- Trending weather tweets can be covered up by other trending tweets



Hootsuite







Hootsuite



Advantages:

- No Twitter account needed
- Easy to set up search streams
- Can geo search
- NOAA approved <u>https://apps.weather.gov/social_media/social_media.php</u>
- Multiple search streams
- Can follow a list of users (Twitter account required)
- Can manage multiple accounts (Twitter, Facebook, Foursquare)
- Can schedule posts
- Auto updates

- Hootsuite account needed
- Not directly hooked up to the Twitter API
- Geo search not built in (or difficult to get to work)



Other Twitter Resources



NWS Twitter #wxreport monitors:

http://wwwdev.crh.noaa.gov/epz/twitter/ (NWS internal) http://mybrowncouch.com/codenoobs/examples/NWSTwitter/

- Tweet Deck (similar to Hootsuite): http://tweetdeck.com
- Twitter Fall (similar to Hootsuite): http://twitterfall.com
- Twaperkeeper (Tweet archiver): http://twapperkeeper.com/
- Trendrr (Tweet trends): http://www.trendrr.com (Fee based)
- Mashable's big list of Twitter tools: http://mashable.com/2008/05/24/14-more-twitter-tools/



Twitter Search Strategies



- Search for weather terms:
 rain, hail, tornado, flood, thunder, wind, snow, etc.
- Search for weather impact terms:
 fire, accident, slick, crash, outage, impassable, etc.
- Search for weather related hash tags:
 #wxreport, #STwx (ie #txwx), #tornado, #weather, etc
- Search for local geographic features: county names, city names, mountains, passes, streams, etc.
- You can do searches for tweets in other languages (Spanish)
- •Search for local reliable tweeters: EM's, local media outlets, spotters, trusted tweeters



Twitter Search Strategies



- Get to know your Twitter community
- Find out who your power tweeters are
- Attend local tweet-ups (meet-up for Twitter folk)
- Host an NWS tweet-up
- Help develop standardized hash tags (#STwx)



Questions???



Advanced Twitter search:

http://search.twitter.com/advanced

Google Realtime search:

http://google.com/realtime

AWIPS Twitter Monitor:

http://bit.ly/iharJY

LAN Twitter Monitor:

http://bit.ly/dF3mWR

GeoTweet:

http://www.geochirp.com/

Geo Tweet Monitor:

http://mybrowncouch.com/codenoobs/examples/monitter

Twitter Trends Map:

http://trendsmap.com/

Hootsuite:

https://apps.weather.gov/social media/social media.php

http://hootsuite.com

Tim Brice
@timbrice17
tim.brice@noaa.gov
NWS – El Paso TX